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Re: Comments of Philips Electronics North America Corporation in FCC MM Docket No. 00-39

To Whom It May Concern:

Enclosed please find a diskette containing a copy of the Comments of Philips Electronics North America Corporation filed in the above-referenced docket.

If you have any questions or need further information, please do not hesitate to contact the undersigned.

Respectfully submitted,

Sara W. Morris

Sara W. Morris

Enclosures

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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Commission's	)	MM Docket No. 00-39
Rules and Policies Affecting the	)	
Conversion to Digital Television	)	
	)	
	)	

COMMENTS OF
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION

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May 17, 2000

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EXECUTIVE SUMMARY

Less than 18 months after the commencement of digital television ("DTV") broadcast service, the DTV transition is going well. Philips, and other consumer electronics manufacturers, continue to introduce new and exciting DTV products, and significant price reductions are bringing DTV within the reach of ever growing segments of the population. As a result of these developments, DTV sales in 2000 are expected to quadruple those of 1999. In addition, more than 120 broadcast stations are on the air, delivering DTV signals to nearly 60 percent of the American population. Numbers of these broadcasters are exploring seriously the potential for datacasting and interactive applications afforded by DTV, a quest which has helped launch new businesses such as Geocast. Most importantly, in consumer electronics retail outlets around the country and in their homes, growing numbers of consumers are experiencing the remarkably enhanced video and audio quality of DTV and registering their approval in the marketplace.

Notwithstanding all of these positive developments, work still needs to be done to ensure that the DTV transition is successful. First and foremost, any lingering doubts over the suitability and viability of the ATSC-adopted 8-VSB transmission standard must be put to rest. The Commission acted wisely when it dismissed the Petition for Special Relief filed by the Sinclair Broadcasting Group ("Sinclair") requesting that the Commission reconsider the exclusivity of the ATSC standard. Early multipath reception problems experienced with 8-VSB transmissions are typical of the kinds of challenges that must be faced in the implementation of any complex new technology and should in no way impeach the technical integrity of the ATSC standard. Philips, along with other digital receiver and chip designers and manufacturers, has been engaged in an intensive effort to improve indoor reception in difficult multipath interference environments. Based upon its progress to date, Philips is confident that the objective of replicating or exceeding NTSC service area coverage can be achieved in a very timely fashion.

The vigor of the competitive response to concerns about indoor reception evidences the strength and capacity of market forces to provide quick solutions to early DTV implementation problems. There is absolutely no need for the Commission to consider adopting minimum performance standards for DTV receivers. Such standards would hinder rather than promote improvements in DTV receiver performance because they would stifle innovation and promote design to the lowest common denominator, harming rather than helping consumers. Moreover, the Commission's authority to promulgate such minimum performance requirements is questionable.

Another area where more progress can and should be made is in the area of digitally-originated programming – especially HDTV. In short, more such programming is urgently needed. Consumer response to HDTV broadcasts, many of which have been subsidized by the consumer electronics industry, has been extraordinarily enthusiastic. However, the quantity of HDTV programming broadcasts has been significantly less than reasonably expected. HDTV programming must be increased to foster the level of consumer interest that ultimately must drive the transition.

Finally, Philips is encouraged by the very considerable progress that has been made in settling long simmering cable compatibility issues. Philips strongly supports the Commission in continuing its laudable efforts to resolve outstanding issues related to copy protection and DTV labeling, which are the subjects of a pending NPRM. Resolution of these issues will ensure that DTV/cable compatibility is achieved and that the nation's cable subscribers are able to participate fully in the DTV transition.

The Commission has played, and continues to play, a very positive role in expediting and facilitating the DTV transition. It has endeavored to let market forces work, but has been ready to intervene when confronted with evidence of marketplace failure. Chairman Kennard had it right when he told the NAB 2000 convention that the transition to digital television is inevitable. With enhanced cooperation among all the affected industries, it will, indeed, be successful.

Before the
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Conversion to Digital Television	)	
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COMMENTS OF
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION

I. INTRODUCTION AND OVERVIEW

Philips Electronics North America Corporation ("Philips") respectfully submits these Comments in response to the *Notice of Proposed Rulemaking* in the above captioned proceeding,[1] reviewing the progress of the nation's conversion to digital television ("DTV"). Philips is proud of its role in the development of DTV, particularly in the creation of the digital television transmission standard adopted by the Commission in 1996.

After more than a decade of financial investment and enormous scientific effort – as well as the extraordinary public-private collaboration fostered by the Commission – the United States' historic transition to digital television is well underway. Less than 18 months after the first digital broadcasts were initiated, DTV is spawning new markets for consumer electronics equipment, broadcast production equipment, programming and a growing array of DTV-related products and services. Based on Consumer Electronics ("CE") industry research and strong first quarter 2000 sales figures, retail sales of DTV products are expected to reach nearly half a

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[1] *Notice of Proposed Rulemaking* in MM Docket 00-39 (rel. Mar. 8, 2000) ("*NPRM*").

million units by the end of the year – quadrupling the number of units sold in 1999.[2] While the majority of these sales involve so-called DTV-capable monitors (i.e., high resolution displays that require a separate DTV tuner/decoder), consumers also are purchasing fully integrated HDTV receivers, as well as set-top converter boxes. Significant price reductions in DTV manufacturers' 2000 model products no doubt are contributing to these strong sales. As of the second quarter of this year, nearly 300 retailers (including Best Buy, Circuit City and Sears), particularly in the Top 30 markets currently served by digital broadcasters, are carrying DTV products.[3] Over a dozen manufacturers have announced more than 100 DTV products, including fully integrated high- and standard-definition DTVs, DTV set-top decoders, and DTV-ready displays.[4]

Today, more than 120 broadcast stations have initiated digital television services, reaching more than 60 percent of all U.S. households.[5] Broadcasters and some cable networks are offering an increasing amount and variety of DTV programming, including all-important high definition television ("HDTV") programming. The cable and consumer electronics industries have reached long-awaited accords on several key DTV-cable compatibility issues. In short, the state of the DTV transition is good.

Of course, there is room for improvement, and additional and important work remains to be done to keep the DTV transition on a successful course. Foremost, it is critical that DTV services reach *all* Americans as quickly as possible, either via over-the-air transmission, satellite

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2 *See* <http:/www.dtvweb.org> Listing up to date DTV sales figures and projections from the Consumer Electronics Association.

3 *Id.*

4 *Id.*

5 *See* <www.nab.org/newsroom/pressrel/dtvstations.asp> Web site of the National Association of Broadcasters.

or cable. For their part, manufacturers must redouble their efforts to bring DTV prices down to truly "mass market" levels, and offer consumers even more variety in affordable "DTV entry vehicles," particularly set-top boxes. In addition, lingering concerns about the viability of the ATSC DTV standard must be put to rest before they further chill DTV investment on all levels. HDTV programming must be increased substantially in order to drive these consumer purchases. Finally, unresolved cable compatibility issues – namely those concerning DTV labeling and the adoption of an acceptable copy protection system – must be brought to closure as soon as possible to ensure cable subscribers' access to DTV.[6]

Philips is taking all practicable steps, both on its own and in cooperation with the affected industries, to address each of the remaining issues affecting the DTV transition in a manner that is technologically sound and in the best interest of consumers. Philips commends the Commission for its extraordinary leadership in shepherding the DTV transition so ably to date and looks forward to working with the Commission to resolve any new challenges that may arise in the future.

II. STATEMENT OF INTEREST

Philips has devoted over fifteen years of research and over $100 million in private capital to help create and commercialize DTV. Philips is extremely proud to have been instrumental in the development of digital HDTV, beginning with its own research initiated in 1983, later as a member of the Advanced Television Research Consortium, and finally as a founding member of the "Grand Alliance," which produced the DTV standard adopted by the Commission in 1996.

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[6] Accordingly, Philips commends the Commission for commencing a separate rulemaking proceeding to resolve these copy protection issues and will comment more fully on these issues in that proceeding. *See In the Matter of Compatibility Between Cable Systems and Consumer Electronics Equipment*, PP Docket No. 00-67, (FCC 00-137), (rel. Apr. 14, 2000) ("*Cable Compatibility NPRM*").

Philips is busily engaged in carrying out its business plans for the roll out of the highest quality, state-of-the-art digital receivers, as well as state-of-the-art digital broadcast production equipment. The centerpiece of Philips' HDTV consumer product line is the 64-inch rear-projection HDTV receiver featuring an interlaced display with 1080 x 1920 lines of resolution. This receiver uses the latest technology to create for consumers an incomparable home cinema experience, combining extraordinarily sharp, clear pictures with crystal clear digital sound. Philips also will market several projection and direct-view models, and continue our flat TV product.

Additionally, Philips plans to offer a line of digital-to-analog converter boxes capable of decoding all ATSC DTV formats, NTSC signals, and in some models, satellite delivered services, for consumers who wish to upgrade the functionality of their existing NTSC receivers to receive DTV programming.

These products will deliver to customers a level of functionality that can be used to exploit DTV to its fullest potential. The range and robustness of Philips' DTV product line reflects Philips unwavering commitment to a rapid and consumer-focused DTV transition.

Philips Semiconductors is a division of Philips, and is a recognized leader in systems-on-silicon solutions for audio, video, and communications. At its research facilities in Sunnyvale, California, Philips Semiconductors is developing new technologies for the 'digital home' including DTV-based, PC-based, and Internet solutions.

In the converging world of digital technologies where the boundaries between computing, communications, and consumer products are disappearing, Philips Semiconductors has developed the cross-discipline expertise necessary to provide the semiconductor backbone to the digital consumer products that function as both home entertainment center as well as gateways to

a vast range of new services. As part of this mission, Philips Semiconductors devotes considerable resources to the development and introduction of the most advanced integrated circuits for DTVs.

Philips and Philips Semiconductors commend the Commission for conducting this thorough review of the DTV transition, and remain committed to working with the Commission and all other industry stakeholders to ensure that consumers are the beneficiaries of a rapid and smooth DTV transition.

The breadth of Philips' DTV products, particularly with regard to the availability of digital set-top boxes from Philips Digital Networks (a division of Philips Electronics) reflects Philips' view that the DTV transition will be facilitated by the availability of set-top boxes, offering the consumer a wide array of services. Under a modular approach, consumers are able to choose from a competitive array of both high-resolution displays of varying costs and sizes, as well as set-top receivers that will be made available by individual service providers and consumer electronics manufacturers. Such an approach provides the consumer with enormous flexibility in making decisions on which services to receive at various stages in the transition, according to their needs and budget. Philips intends to work with all stakeholders – such as DTV-related service providers, cable operators, and consumers alike – to make devices available that exploit all the possible applications possible under the ATSC DTV standard, and that drive the transition forward.

III. A TECHNICAL ANALYSIS OF THE DTV IMPLEMENTATION PROCESS REVEALS THAT DTV RECEIVER TECHNOLOGY IS RAPIDLY ADVANCING, GREATLY INCREASING INDOOR RECEPTION CAPABILITIES.

In February 2000, the Commission wisely denied a Petition for Expedited Rulemaking filed by Sinclair Broadcasting Group ("Sinclair") urging the Commission, nearly three years after the ATSC standard was adopted, to modify its rules to permit the use of COFDM

modulation in addition to the 8-VSB transmission standard.[7] Nonetheless, Sinclair and others continue to argue that the ATSC Standard's use of 8-VSB modulation makes it intrinsically incapable of reliably delivering DTV. Now, the Commission seeks comment on the current status of the 8-VSB standard, specifically, "the progress being made to improve indoor DTV reception under the existing transmission standard and manufacturers' efforts to implement DTV design or chip improvements."[8]

Philips has conducted a comprehensive technical analysis of the implementation of the ATSC standard. This analysis reveals that, notwithstanding early difficulties with indoor reception of over-the-air DTV signals in strong multipath interference environments, efforts to improve indoor reception of 8-VSB, led by improvements in receiver chips, are progressing rapidly. In fact, the early multipath interference problems are typical of the kinds of technical challenges that must be addressed whenever a complex new technology is implemented for the first time. Philips' engineers, who are experts in VSB and other digital modulation schemes, have concluded that early receiver problems were due to receiver implementation issues and were not indicative of any flaw in the ATSC standard. Consequently, Philips is devoting substantial resources and achieving rapid advances in receiver chip performance that will ensure that over-the-air reception by digital television receivers of 8-VSB digital broadcast transmissions equals or exceeds the reception of NTSC signals. As discussed in more detail below, based on Philips' own work to date, and parallel efforts of our competitors and other chip manufacturers, Philips expects this goal will be attainable in the near future.

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[7] *See* Letter to Martin R. Leader, from Magalie Roman Salas, By Direction of the Commission, dated February 3, 2000 (rel. Feb 4, 2000).

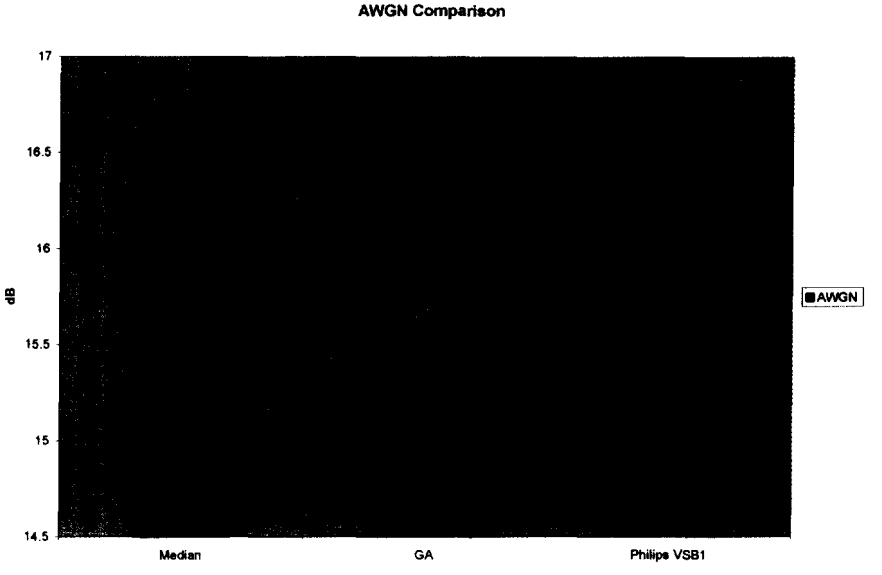
[8] *Notice* at ¶ 12.

A. Demonstrable Chip-Set Improvements Are Producing Markedly Better Receiver Performance in Challenging Multipath Interference Environments.

Philips is developing advanced DTV receiver chip-sets that are clearly improving, and will continue to improve, over-the-air reception performance of digital television receivers, rendering moot concerns expressed by some broadcasters about the suitability of the 8-VSB standard regarding indoor reception. Philips Semiconductors has introduced two generations of products into the market, and third generation product will be forthcoming soon. The following discussion summarizes, in technical terms, the progress Philips has made to date in this area and the scientific bases for Philips' confidence that indoor reception, utilizing the 8-VSB standard, will be a non-issue in the near future.

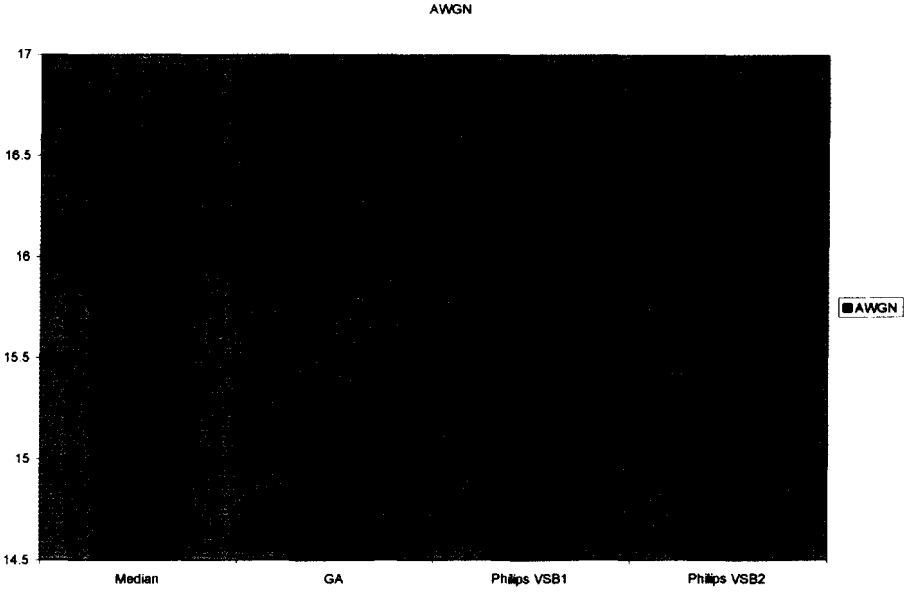
The baseline for VSB reception performance was set by the Grand Alliance's so-called "Blue Rack" – which consisted of test results reflecting various conditions, and which set performance parameters for a "nominal" DTV receiver. Manufacturers' original expectation was that the first generation of VSB demodulation semiconductors would approach the "Blue Rack" performance baseline, and Philips Semiconductors set out to develop a receiver chip capable of meeting that standard to the greatest extent possible and practicable. Philips engineers were able to make significant advances in carrier and pilot recovery as well as new equalization techniques. In addition, improvements in signal-to-noise ratio and static echo cancellation resulted in very positive field test results at the Advanced Television Testing Center ("ATTC"). Based on these test results, Philips Semiconductors' introduced its first generation VSB demodulator ("VSB1") in 1997.

The chart below shows the relative performance of first generation silicon with respect to the model receiver of the Grand Alliance and the median performance in an all "white noise" environment ("AWGN"):



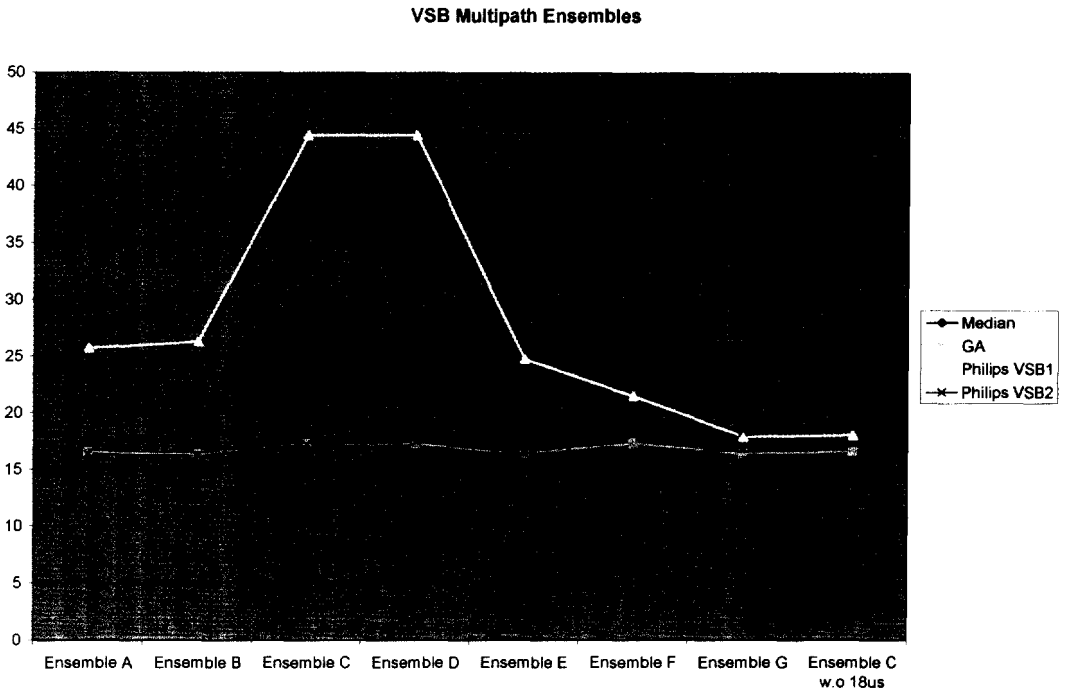
Unfortunately, first generation VSB demodulators were unable to reach the same levels of performance as the Grand Alliance setup while remaining cost-effective and commercially viable solutions. It is very important to note the difference between an ideal receiver (represented by the Grand Alliance) and a commercially viable product, where complexity of demodulation circuitry must be balanced against cost and manufacturing concerns. This is indicated by the difference in median performance in an AWGN environment between Grand Alliance model receiver and VSB1.

However, as is the case with nearly all mass-market CE products, time and technology yield higher performance and lower cost products. This phenomenon is evidenced by Philips Semiconductors' second generation VSB product ("VSB2"). The chart below shows the more than 1 dB improvement of VSB2 over VSB1 in the AWGN environment:



The dramatic improvement between VSB1 and VSB2 was achieved in only one year. Although Philips' second generation VSB chip set nearly matches the performance of the Grand Alliance set-up, the improvement shown in the chart relates only to the single element of AWGN. During the months spent testing and evaluating the performance of the first generation product, it became clear that the area of most difficulty in VSB reception is multipath performance. One of the key targets of the second-generation product was to make significant improvements in strong multipath environments.

The chart below shows multipath performance in each Grand Alliance ensemble and demonstrates the improved performance of Philips' second generation chip:

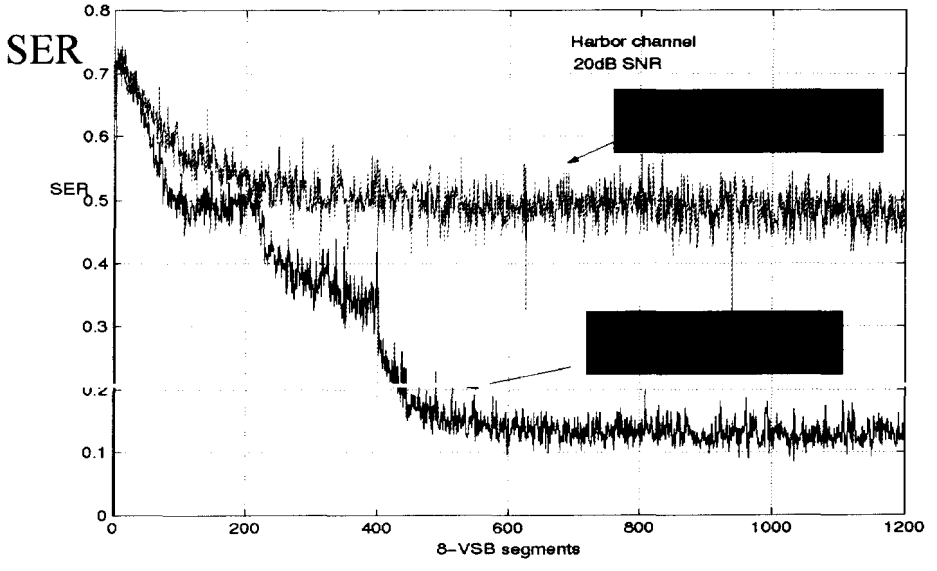


Philips Semiconductors' VSB2 product meets or exceeds the Grand Alliance "Blue Rack" in almost every ensemble. In this case, performance improvement achieved over the median was more significant than the first generation product, mostly due to the availability of over-the-air DTV signals, which enabled Philips Semiconductors to perform real world testing and channel modeling. With its second-generation product, Philips Semiconductors has been able to improve coverage to a degree where it achieves reception quality similar to, and in some cases better than NTSC.

Currently, Philips Semiconductors is developing its third generation VSB demodulation receiver chip, which is slated for introduction in early 2001. Consumer products based on this chip are expected to be available in retail channels by the fall 2001 shopping season. This third

generation VSB chip, ("VSB3"), is targeted to enable indoor reception even in strong multipath environments. Early algorithmic data from research and development supports meeting this target.

For example, one of the test cases that has been used to support claims of VSB inadequacy in strong multipath environments is the so-called "Harbor Channel" case, which is named for a geographic location that produces particularly severe multipath interference. In the interest of a speedy transition to DTV, Philips Semiconductors has focused heavily on the Harbor Channel analysis. Using a highly accurate model of our third generation device, Philips is able to demonstrate quantitatively that VSB3 will, in fact, be able to receive a signal in the Harbor Channel. The chart below shows the improvement of VSB3 over earlier VSB demodulators for the Harbor Channel case:



B. Philips is Working Closely with other Manufacturers and Broadcasters to Implement Improved ATSC DTV Reception.

Philips is working with other CE manufacturers as well as broadcasters to ensure that the 8-VSB transmission standard performs at a level that provides over-the-air reception to the widest possible audience, and replicates existing NTSC coverage areas as closely as possible for the values used to construct the FCC's DTV Allotment Table. For example the ATSC recently formed a new "RF Task Force" to examine technical issues related to DTV RF system performance, and, based on this technical analysis, make recommendations regarding potential ATSC technical initiatives. The formation of this group evidences a cooperative spirit among industry stakeholders and a commitment to the long-term viability and success of DTV.

In addition to its work in the lab, Philips is working directly with broadcasters to address their 8-VSB reception concerns. Just recently, Philips announced a joint research initiative with Fox Television to improve ATSC DTV reception, while also generating a greater understanding of other data broadcasting capabilities, including service to portable devices, such as laptops. Under this initiative, Philips will contribute algorithmic and architectural modifications to improve the performance of 8-VSB receivers, and Fox will provide extensive data, laboratory and field analyses generated from its experience operating its 22 local television stations that are already offering digital service. Philips is confident that the results of this program will significantly improve the performance of early receivers and enable U.S. consumers to enjoy the highest quality digital television possible.

In short, rapid technical developments conducted in an environment of inter-industry collaboration and cooperation will ensure that the 8-VSB transmission standard performs as expected. The ATSC standard is well suited for over-the-air reception and is sufficiently flexible

and contains enough "headroom" to support the development and introduction of new technologies to support new business models.

C. Any Attempt to Change the DTV Transmission Standard is Fraught with Uncertainty and Will Jeopardize the Transition.

The Commission deserves a great deal of credit for the progress of the DTV transition to date. In particular, the Commission should be credited for ensuring that issues pertaining to DTV's implementation are the primary focus of the Commission's review of the overall integrity and pace of the transition. The Commission's rejection of the Sinclair Petition is an example of this commitment to ensuring that the DTV transition moves forward without unnecessary disruption and delay. However, in recognition of the concerns some broadcasters continue to raise with regard to the threshold question of whether to retain the ATSC DTV standard at all, Philips urges the Commission – and broadcasters – to consider (particularly in light of the progress being made on indoor reception) the extraordinarily negative, if not fatal, consequences that would flow from a decision to even *consider* reopening the DTV standard.

First and foremost, any indication by the FCC of revisiting alternatives to the standard will cause both consumers and broadcasters to reconsider and probably cease plans for purchasing DTV equipment due to concern that their purchases may become obsolete. In turn, this will halt DTV penetration while evaluations of other potential standards are underway. As a result, in all likelihood, the penetration rates necessary to reclaim broadcast spectrum in 2006, as mandated by Congress, would not be attained.

Second, the entire transition process to date could be sacrificed even though great progress has already been made. The 8-VSB standard was thoroughly tested for years. Based on its characteristics, the DTV channel allotments were designed to minimize co-channel and adjacent channel interference in the very demanding radio frequency environment where the

number of stations must double during the transition period. The characteristics of any other modulation scheme for these attributes are not known and will take extensive time to determine and test. The resultant likely changes to the DTV channel allotments will penalize all those broadcasters which have relied upon the certainty of the FCC's adopted DTV standard and invested in the promise of a rapid transition.

Finally, any reconsideration of the DTV standard's modulation scheme would inevitably trigger reconsideration of the standard's other features. As the Commission is well aware, the exceptionally thorough and inclusive process that resulted in the ATSC standard, like so many complex endeavors, entailed a series of choices – technical and otherwise – all of which would have to be made again were the standard to be reopened. The disruption and delays in the DTV transition attendant to any consideration of reopening the transmission standard are contrary to the public interest and cannot be justified in light of the rapid improvements in 8-VSB receiver performance.

IV. THERE IS NO SOUND LEGAL OR POLICY BASIS FOR THE COMMISSION TO ADOPT DTV RECEIVER STANDARDS.

Philips is concerned that some parties are recommending that the Commission set minimum performance levels for DTV receivers. As an initial matter, and as discussed in detail above, Philips believes rapid technological advances will soon allay any performance concerns. Nevertheless, the Commission seeks comment on whether it has "the authority to set minimum performance levels for DTV receivers . . . [and] the desirability of adopting performance levels."[9]

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[9] *NPRM* at ¶13.

A. The Commission Lacks Statutory Authority to Adopt DTV Receiver Performance Standards.

Any discussion of whether or not the Commission should adopt DTV receiver performance standards must begin with an analysis of whether the Commission has the statutory authority to adopt such standards. Indeed this very issue was analyzed as part of the Commission's DTV proceeding.[10] In that proceeding, several of the parties advocating the FCC's adoption of receiver performance standards attempted to establish the Commission's authority to adopt DTV receiver standards by referencing the *All Channel Receiver Act* ("ACRA").[11] The ACRA was adopted in 1962 for the singular purpose of improving the viability of UHF television service in the U.S.[12] However, neither the plain language nor the legislative history of the ACRA support the argument that the Commission has the authority to establish broad receiver performance standards. In fact, the technical and policy issues that govern the DTV transition are of an entirely separate nature and scope than those that governed the viability of UHF broadcasts. As a consequence, any attempt to ground Commission authority to promulgate DTV receiver standards on a statute specifically directed at the limited issue of UHF-reception is totally misplaced.[13]

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10 *Fourth Further Notice of Proposed Rule Making/ Third Notice of Inquiry* in MM Docket No. 87-268, 10 FCC Rcd 10541 (1995); *Fifth Further Notice of Proposed Rule Making* in MM Docket No. 87-268, 11 FCC Rcd 6235 (1996).

11 47 U.S.C § 303(s).

12 *See* S. Rep. No. 1526, 87th Cong., 2d Sess.2 (1962)

13 Additional discussion of the legal impediments to the Commission adopting DTV receiver performance standards is included in the Comments being filed in this proceeding by the Consumer Electronics Association. Philips fully supports CEA's legal analysis of the Commission's authority and hereby incorporates it by reference in these Comments.

B. Receiver Standards Would Stifle Technological Innovation and Harm Consumers.

In addition to the Commission lacking the legal authority to promulgate DTV receiver standards, as a practical matter, such standards ultimately would hinder rather than promote improvements in DTV receiver performance. A principal difficulty in promulgating meaningful performance criteria is in quantifying the complex realm of field conditions that affect digital television service. There is a temptation to describe the performance of a DTV receiver in overly-simplistic parametric terms – such as an equivalent to the NTSC UHF noise figure requirement. But to do so would be a mistake. For example, there is no supportable argument for the suggestion that a DTV receiver's expected performance can be reliably predicted by a Commission-mandated threshold concerning its demodulator architecture.

In the analog context, the Commission established that a prediction of service coverage, in the absence of interference, can be established using a statistical measure of expectation of service. These NTSC Propagation Curves are based on factors such as transmission antenna height and power, a propagation model, and certain planning factors that take into account the overall transmission link, such as antenna cable loss and receiver noise figure. However, these propagation curves are limited to being able to only specify statistically the expected signal level at the antenna terminals of a specified proportion of the receivers. They do not provide any insight into how any particular receiver may perform; they simply allow a broadcaster to calculate statistically how many viewers in the broadcast coverage area will receive an "acceptable" signal given certain technical assumptions.

The motivation of manufacturers to provide receivers which function satisfactorily under the most challenging conditions cannot be overstated. It is a critical competitive factor for consumer acceptance. However, to impose a numerical or behavioral requirement on the

performance of the product assumes a tractable one-to-one mapping between the requirement and receiver performance. Philips, and all other CE manufacturers interested in market-place success, continually improve the performance and capabilities of their products. Given the fiercely competitive nature of this industry, each successive product cycle brings with it new innovations that continually enhance the consumer viewing experience while increasing the performance and reliability of the products available. There is no clearer example of this phenomena than the rapid market-driven improvements in DTV receiver chip-sets described above. If the Commission were to attempt to dictate terms for base-line receiver standards, Philips and its competitors would be forced to focus their efforts on building to meet the Commission standard, rather than striving to manufacture the very best products available. The end result would be a net loss in innovation for consumers.

Because DTV receiver performance standards would interfere with proven market-based incentives that drive the CE industry, Philips urges the Commission to follow the precedent set throughout the Commission's DTV proceedings,[14] and reject any proposals that call for the Commission to adopt minimum performance levels for DTV receivers.

V. THE DTV TRANSITION COULD BENEFIT FROM GREATER AMOUNTS OF HIGH DEFINITION PROGRAMMING.

Although the DTV transition is gaining momentum, its pace could be accelerated and consumer enthusiasm could be increased if broadcasters were more aggressive in exhibiting HDTV programming. The ATSC standard was developed with HDTV featured as the center piece to drive the DTV transition. Numerous hearings and HDTV demonstrations were held on

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[14] *See e.g. Memorandum Opinion and Order/Third Report and Order*, 7 FCC Rcd 6924, 6984 *Fourth Further Notice of Proposed Rule Making/ Third Notice of Inquiry* in MM Docket No. 87-268, 10 FCC Rcd 10541, 10551 (1995); *Fifth Report and Order* in MM Docket No. 87-268, 12 FCC Rcd 12809, 12855-6 (1997).

Capitol Hill.[15] The other opportunities that the ATSC standard can provide, such as simultaneous transmission of multiple SDTV programs and data carriage, are important, but HDTV remains the DTV application that adds the "wow" factor to the transition.

Consumer response to HDTV broadcasts has been extraordinarily enthusiastic. In response to this enthusiasm, Philips and the rest of the CE industry have invested heavily in developing ATSC-compliant HDTV receivers and displays, all based on the continuing belief that HDTV is the best introduction vehicle for DTV because consumers immediately respond to its vastly improved picture and crystal clear sound. However, while some broadcasters have made efforts to offer HDTV programming to consumers, those efforts must be increased to foster the level of wide spread consumer interest that will ultimately drive the DTV transition. Accordingly, as the transition moves forward, affected industries and the Commission should work cooperatively together to pursue creative incentives to offering HDTV programming on wide scale basis.

VI. GREAT PROGRESS HAS BEEN MADE TOWARDS DTV CABLE COMPATIBILITY. WITH THE RESOLUTION OF OUTSTANDING COPY PROTECTION AND DTV LABELING ISSUES, CABLE SUBSCRIBERS WILL BE ABLE TO JOIN IN THE DTV TRANSITION.

Currently, more than 70 percent of all television viewers receive their TV programming over cable. The ability to connect DTV receivers with cable television systems (as well as with other digital devices in the home), is critical to DTV's implementation and a top priority for all stakeholders in the DTV transition. That is why Philips was so encouraged when the cable and CE industries reached their agreement on technical requirements for direct connection of DTV

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[15] *See* Hearing before the Committee on Commerce, Science, and Transportation, United States Senate, September 19, 1997; Hearing before the Subcommittee on Telecommunications Trade and Consumer Protection , Committee on Commerce, U.S. House of Representatives, April 23, 1998.

receivers to digital cable systems and the provision of tuning and program schedule information ("PSIP").[16] However, two other issues – how to label DTV receivers equipped with various interconnection functions and features (such as impulse pay-per-view and the IEEE 1394 interface), and licensing terms for copy protection technology – remain the subject of an ongoing FCC rulemaking.[17] In adopting its *NPRM* on these issues the Commission stated "that further delay in resolving these issues could begin to have deleterious effects on the deployment of a universe of products and services that will benefit the American public and, indeed, delay the implementation of DTV."[18] Philips agrees with this assessment.

Philips has been encouraged by recent industry negotiations concerning DTV labeling and believes an agreement is imminent. Nevertheless, Philips urges the Commission to continue the commendable efforts it has made to date to keep pressure on all industry players to resolve these issues in the quickest and most consumer friendly way possible. Once these compatibility issues are resolved, cable subscribers will be able to participate more fully in the DTV transition. This will substantially increase DTV penetration rates and contribute greatly to the smooth and timely completion of the transition.

VII. CONCLUSION.

Philips commends the Commission for its efforts to ensure a smooth transition to DTV, including this timely review of the status of the transition to date. As described above, the DTV transition is well underway. Philips is confident that the continued efforts of the CE, broadcast

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[16] *See* Letter from Robert Sachs, President and CEO, NCTA and Gary Shapiro, President and CEO, CEA to William Kennard, Chairman FCC (Feb. 22, 2000).

[17] *See Cable Compatibility NPRM.*

[18] *Id* at ¶ 3.

and cable industries, and the supportive involvement of the Commission, will enable consumers to enjoy all of the benefits that DTV has to offer.

Although the DTV transition has experienced some implementation difficulties, these problems are typical of the introduction of any new technology and are rapidly being addressed by market-driven improvements in DTV technology. For example, successive generations of Philips' DTV receiver chip technology will ensure that consumers enjoy over-the-air reception of DTV that is equal to or greater than existing NTSC reception. These improvements make it unnecessary for the Commission to reconsider the DTV transmission standard or to set minimum standards for DTV receiver performance. By allowing market-driven solutions to address DTV implementation problems as they arise, the Commission will ensure the most rapid and consumer friendly transition possible.

Respectfully submitted,

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